

BE -11

**INCREASING STUDENT'S LEARNING ACTIVITIES AND ACHIEVEMENT
IN GENERAL BIOLOGY COURSE USING READING,
QUESTIONING, AND ANSWERING METHOD**

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Abstract

Student's learning activities and achievement are the basic competences that student should have after learning. Active learning got some trouble to aplicate. It happen because the student don't prepare their primary knowledge seriously. One alternative to solve this problem is using Reading, Questioning, and Answering method. This research is an action research that conducted in two cycles. Each cycle consists of planning, implementation, observation, and reflection. The subjects consisted of 46 student. The data were collected using observation sheets to know student's learning activities and test instruments to know student's learning achievement. The data were analyzed using qualitative approach, using percentage formula. The result of students' learning activities and achievement in the first cycle were not good, therefore the research continue to the second cycle. The second cycle showed the increasing of student's learning activities and achievement. The result show that RQA method can increase student learning activities and achievement.

Keyword: *Student's Learning Activities, Student's Learning Achievement, RQA Method*

INTRODUCTION

Learning process in university efforted to make students participate optimally. This opinion in line with an opinion of Zaini et al. (2002) that said: as an adult person, university students usually directing themselves to get vary experiences, preferring problem-centered and performance-centered learning. Thereby, students in learning must be active and fully participated.

The students will participate if they have primary knowledge about the material that will discuss in the class. Arisimunandar (2003) said that by learning course material first, the course will be implemented easily, fluently, and enjoyable. Students' questions will be directed, so that students can get a better comprehension.

The fact, seldom to find students that want to prepare themselves about the material before it discuss in the class, except if they are gived assignment. This case make problems in learning, because the students tend to be passive. This fact also occur in General Biology course.

General Biology Course is a compulsory course for the first year students that learn in Faculty of Mathematics and Natural Science Padang State University. Students' bad habits in learning at senior high school often be found in the class. The students difficult to follow a lot of

learning material, but they also don't want to prepare themselves before learning in the class. This matter was observed from the observation in General Biology class Mathematics Program in the first and second meeting. Students' learning activity still in very bad category (35%), it was also happen in students' learning achievement. Learning achievement is one of measurement of students's successive level after follow certain course (Bahri, 2010). In the observation stages before did the research, posttest done for the students, and the result was in bad category (62%). This fact require a learning improvement to solve this problem soon.

One of the method that can be used to solve that problems is using Reading Questioning and Answering (RQA) method. RQA method is one of learning method that was be developed use constructivism learning theory as the foundation. In this method, students are asked to read the learning material first at home, that will learn in the next meeting in the class, than they are asked to make question in higher-order-thinking level (C4-analyze, C5-evaluation, and C6-creation) based on their reading. RQA method's implementation proven able to force students read the assignment materials, so that the learning plan can implementate properly, and students' comprehension can be improved almost 100% (Corebima, 2009).

The result of Bahri's study (2010) showed that RQA method can increase students' metacognitive skill and cognitive learning achievement. It happens because RQA method require students to be active in preparing themselves before learning process in the class and also think well the question that they make to discuss the learning material. That process will make students participate in learning, and will improve students's thinking ability by making questions and answers before learn the material in the class. Thereby, this method can motivate students to study hard.

Students' good motivation will improve students' interaction, and also students' learning activity. Increasing of students' learning activity will influence cognitive learning achievement. Learning achievement increase because the students prepare themselves before learning process in the class. Increasing of students' learning activity and achievement are the essential aspect to be noticed, because both of the aspects are the main indicator in measure students' achievement in learning. Therefore, it was necessary to do action research that try to increase students' learning activity and achievement in General Biology course by using RQA method.

Formulation of the problems in this research are: (1) does the using of RQA method can increase students' learning activity in General Biology course? and (2) does the using of RQA method can increase students' learning achievement in General Biology course?

This result goals to reveal the increasing of students' learning activity and achievement in General Biology course after using RQA method. Thereby, this research useful for: (1) students to increase their learning activity and achievement, (2) lecturers to increase learning achievement in their class, and (3) other educators as one of alternative way to solve the problem about students' learning activity and achievement that still bad.

RESEARCH METHOD

This research is an action research using qualitative approach. This research was conducted in two cycle. Each cycle consist of four stages: (1) planning, (2) implementation, (3) observation, and (4) reflection. Each cycle done in four meetings, and used 3x50 minutes time allocation for each meeting. Planning done by making the plan about learning material that was used for RQA method implementation. First cycle consist of: (1) cell, (2) cell transport, (3) cell metabolism, and (4) diversity and classification. The second cycle consist of: (1) classification and stucture of plants body, (2) classification and structure of animal body, (3) digestive system, and (4) respiratory system.

The implementation was conducted by implementate RQA method in learning process, includes: students are asked to read certain material, than make questions, and answer it by

themselves. The main reference that used was General Biology Module that was developed by General Biology team. The other reference are textbook, journal, research report, and other sources about biology.

All of questions and answers are written individually or in group. The question must be ask higher-order-thinking, in cognitive level C4, C5, dan C6. Then, students have to answer their questions using proper reference. In learning process, some students are asked to read their questions and answers in front of the class, than the other students are asked to give comments, suggestions, or other questions related.

All of the stages in RQA method was measured as students' learning activities, includes: (1) questioning, (2) answering, (3) adding, (4) commenting, dan (5) others, like do presentation, make conclusion, etc. The activities was observed by using observation sheet. Before the learning end, students are asked to do posttest about the material that discuss in that meeting using essay test. After three stages are done, than reflection are conducted. Reflection done as the evaluation to make planning for the next action in other cycle.

Subject of this research are Mathematics students that learn General Biology at even term 2013. The subject consist of 46 students. This research was conducted in Biology Department learning room, C.18.

Data were analyzed using percentage formula that modified form Zafri (2000)

$$SLA = \frac{n}{N} \times 100 \%$$

Description: n = amount of sample that do learning activity
N = amount of total sample
SLA = students learning activities

The percentage will be converted to criteria that modified from Purwanto (2004), includes:

90 – 100%= very good, 80 – 89%= good, 65 – 79%= good enough, 55 – 64%= not good, and 0 – 54%= very bad. Sufficient indicator is if students' learning activity and achievement reach good criteria (≥ 80%).

RESULT AND DISCUSSION

Based on the action using RQA method in General Biologi course learning process, the result are as follow. The average of students' learning activities in every meeting presented in Table 1. Furthermore, the average of students' learning achievement in every meeting showed in Table 2.

Table 1. The Average of Students' Learning Activities Percentage

Num	Observed Aspect	Percentage of First Cycle/ Meeting				Average Percentage of First Cycle	Percentage of Second Cycle/ Meeting				Average Percentage of Second Cycle
		1	2	3	4		1	2	3	4	
1	Questioning	6,5	13,0	17,4	15,2	13,0	19,6	21,7	26,1	26,1	23,4
2	Answering	4,3	10,9	13,0	15,2	10,9	17,4	15,2	21,7	17,4	17,9
3	Adding	17,4	17,4	15,2	19,6	17,4	15,2	19,6	21,7	21,7	19,6
4	Commenting	4,3	10,9	6,5	8,7	7,6	13,0	8,7	10,9	13,0	11,4
5	Others (Presentation, Make Conclusion, etc)	13,0	17,4	19,6	17,4	16,8	19,6	21,7	21,7	19,6	20,7
						65,8					92,9
	Criteria					Enough Good					Very Good

Table 1 show that students' learning activities increasing about 27,1% from the first cycle to the second cycle.

Table 2. The Average of Students' Learning Achievement Percentage

Num	Aspect	First Cycle				Second Cycle			
		1	2	3	4	1	2	3	4
1	Amount of Mark	3244	3476	3504	3646	3789	3876	3839	3914
2	Average	70,5	75,6	76,2	79,3	82,4	84,3	83,5	85,1
3	Average per Cycle	75,4				83,8			
4	Criteria	Enough Good				Good			

Table 2 also show the increasing of students' learning achievement by using RQA method in General Biology course, about 8,4%. This fact prove that the using of RQA method in General Biology course can increase students' learning activity and achievement as illustrate in Figure 1.

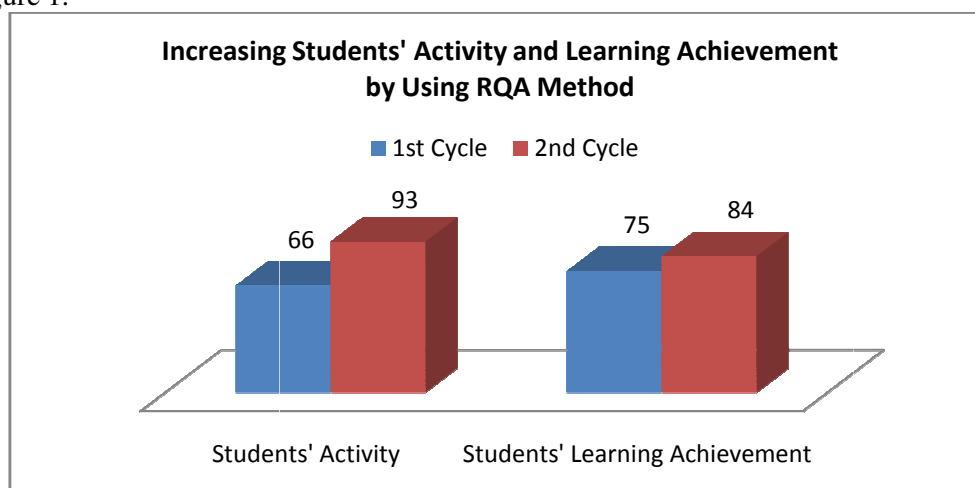


Figure 1. Increasing of Students' Learning Activities and Achievement in General Biology Course Using RQA Method

Figure 1 show that the average of students' activities in the first cycle is 66% or good enough criteria. Therefore, the action continue with learning improvement in the second cycle. The improvement done based on the reflection of first cycle. On the second cycle, students' learning activities have reached 93% or very good criteria. Students' learning achievement seen from posttest result in the first cycle only 75% or good enough criteria. On the second cycle, it is increasing until 84% or good criteria. Therefore, this research only done in two cycles, because it can reach the result that expected.

In the first cycle, students' learning activities still not good, or in criteria good enough. Based on reflection of the first cycle, known that it happened because some factors as follows. (1) The students unfamiliar with RQA method that implemented. It makes many students still passive in learning. (2) Time allocation that available was not enough to discuss all the questions made by students. It happens because the students sometimes still search the answer in the class using internet mobile by cellular phone. It makes losing time when waiting the students find the answers. Besides that, the answers that given by students still not appropriate with the expectation. (3) Students didn't have good enough motivation to study. Therefore, learning improvement done in the second cycle.

Action that done in the second cycle as the learning improvement based the reflection of students' activities at the first cycle are as follows. (1) Lecturer try to make the students be familiar with questioning, answering, adding, and commenting by giving reward in the form of giving additional mark for the students that show learning activities, so that the students became more active than before. (2) Time allocation problem solved by giving student chance to asking question or consultate any question by e-mail or SMS, so that students can explain the answer of their question in the class without searching in internet. If student want to search in internet, they must do that activity at home before study in the class. It maked the time used effectively.(3) Students' motivation are increased by giving motivation for the students that they must have high power to study, because that semester was their first semester to learn in university. Students must be strong, if they want to exist learn in university. Students' motivation also be increased by using reward that give to the active students.

The learning improvement done to make lecturer and students, both active in educational interaction. Djamarah (2000) said that impossible to be happen an educational interaction if only one of the aspect that active. Therefore, known that educational quality is depend on participation and contribution of all the stakeholders. Lecturer will increase students' communication ability, can read the unborn ideas from the students, and help students to mention their opinion (Arismunandar, 2003).

There are many benefits that can get by concerned students' learning activities. Hamalik (2004) tell that using of activity principles give a big value in learning, because it can give individual experience, develop personality aspect integrally, train up the students be dicipline, and have a harmonization when working together. This fact showed from the increasing of students' learning achievement as good as students' learning activity in this research.

Increasing of students' learning activities and achievement happens because RQA method prosperity good with learning principles by Wittig(1981; Syah, 2003) that mentioned every learning processes always conducted in three stages, includes: (1) acquisition (receiving information), (2) storage (saving the information) and (3) retrieval (getting the information again). Therefore, students' comprehension for the material that they are learned will increase, because the information learn repeatedly.

Therefore, increasing of students' learning achivement using RQA method must be happen, because this method force the students to read and comprehend the material seriously, that try to find the essensial content. When students can find the essensial content, it showed that students are ready to make question that represent their learning material, than answer the questions. In addition, when some students read their questions and answers individually or in group in front of the class, it is believed that important content of the material have been socialized to all the students in the class (Bahri, 2010).Thereby, if the students practice the RQA method well, they will increase their learning achievement.

In the first cycle, the questions that was maked by students generally in low cognitive level (C1-remember, C2-understand, dan C3-aplicate) as Bloom Taxonomy revised by Anderson & Krathwol (2001), so that when giving posttest with high cognitive level (C4-analyze, C5-evaluate, dan C6-create), the students were difficult to answer it. The effort of learning improvement that done in the second cycle was by training the students to make a good question and give the sample. When students' ability in making question increase, it will help them in doing posttest. Therefore, increasing of students' learning achievement reach in second cycle.

Questioning skills that trained in RQA method are very important to develop students'critical thinking and creativity, and also to get complete infomation, scientific, substansial, and structured (Collis & Davey, 1986). Someone that skillful in questioning, can asking deeply. Nasution (1995) mentioned that the best result will reach if 40% learning time

used to read and 60% to recitation or tell the content of material by questioning while reading. These aspect are aplicated in RQA method.

RQA method fundamentally train students to be an independent learner. Independent learning ability is one of educational successfulindicator, because the students trained to communicate by questioning, answering, giving comments, tell opinion, discussion, associate, and understand with society problems. According to Arismunandar (2003),independent learning starts by asking students read the material at home before study in the class, than students ask question and find the answer. In the class the material that discuss will be effective, because only discuss the difficult material that students still don't understand and need explanation from the lecturer. Therefore, using of RQA method effective to increase students' learning activity and achievement.

CONCLUSION AND SUGGESTION

RQA method can increase student activities and learning achievement in General Biology course. Therefore, suggested to all educators to use RQA method in learning process, in order to make students have enough primaryknowledge, so that they can be an active students and give the optimal achievement. In addition, educators should try to find the other alternatives learning method to vary the effort to increase students' learning activities and achievement.

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